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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,868

01/16/2007

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118264-162607

5462

76285

7590

03/06/2009

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EXAMINER

CHANG, HANWAY

ART UNIT

PAPER NUMBER

2881

MAIL DATE

DELIVERY MODE

03/06/2009

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/574,868	<b>Applicant(s)</b> ALBERICI, STEFANO GIOVANNI	
	<b>Examiner</b> Hanway Chang	<b>Art Unit</b> 4183	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 13 February 2009.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 3-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 3-21 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 April 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>04/06/2006</u> .  | 6) <input type="checkbox"/> Other: _____                          |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 3-6, 8-13, and 15-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach (US Pat. 4,810,880, hereinafter Gerlach) in view of Tsuno (US PGPub 2001/0052744, hereinafter Tsuno).

Regarding claims 3, 8-10, and 15-17, Fig. 1 of Gerlach discloses an electron spectroscope comprising a spherical capacitor energy analyzer (82) (see col. 5, lines 5-13) comprising an inlet (88) (see col. 5, lines 16-17) receiving the electrons emitted from the excited surface of the sample (14) (see col. 3, lines 45-51) , with the emitted electrons being decelerated and focused on the inlet and producing a spectrum representative of a distribution of kinetic energies of the emitted electrons over the inlet (see col. 5, lines 27-44); and a detector (110) for detecting the emitted electrons traveling through the spherical capacitor energy analyzer for reproducing the distribution of the kinetic energies of the emitted electrons along at least a direction orthogonal to a radial direction of the spherical capacitor energy analyzer (see col. 5, lines 56-67). It should be noted that the detector (110) is shown to be placed substantially orthogonal to a radial direction of the spherical capacitor energy analyzer.

A difference between Gerlach and the claimed invention is the field emission source producing an electron beam and a monochromator energy filter for filtering the electron beam. However, in the same field of endeavor, Fig. 11 of Tsuno discloses a field emission source (21) (see paragraph [0048]) for producing an electron beam for exciting a surface of a sample (33) so that electrons are emitted therefrom; and a monochromator energy filter (30) for filtering the electron beam (see paragraph [0061-0062]). In view of such teaching, it would have been obvious to the ordinary artisan at the time the invention was made to modify the invention of Gerlach by having a field emission source with a monochromator energy filter for the purpose of having greater control over the selection of energy the electron beam has.

Regarding claims 4, 11, and 18, Gerlach discloses the claimed invention except for the monochromator energy filter reducing the energy dispersion to less than 0.2 eV. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Gerlach by reducing the energy dispersion of the electrons of the electron beam to less than 0.2 eV, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 5, 12, and 19, Gerlach discloses the claimed invention except for the monochromator energy filter reducing the energy dispersion. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Gerlach by reducing the

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energy dispersion of the electrons of the electron beam to less than 0.1 eV, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Regarding claim 6, 13, and 20, Gerlach discloses the claimed invention except for the surface of the sample being excited by the electronic beam has linear dimensions less than or equal to 100 nanometers. However, it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the invention of Gerlach by having the surface of the sample to be excited to have linear dimensions less than or equal to 100 nanometers, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art.

Claims 7, 14, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gerlach in view of Tsuno as applied to claims 3, 8, and 15 above, respectively, as evidenced by Shinada et al. (US Pat. 6,583,413, hereinafter Shinada).

Regarding claims 7, 14, and 21, a difference between Gerlach and the claimed invention is the field emission source comprises a Schottky emission source. However, in the same field of endeavor, Tsuno teaches the use a Schottky emission source as a field emission source (see paragraph [0048]). Shinada discloses the use of Schottky emission sources have advantages, such as providing stable electron emission over a long time (see col. 10, lines 9-15). In view of such teaching, it would have been obvious to the ordinary artisan at the

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time the invention was made to modify the invention of Gerlach by using a Schottky emission source for the purpose of providing stable electron emission over a long time as taught by Shinada.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hanway Chang whose telephone number is (571)270-5766. The examiner can normally be reached on Monday to Thursday 7:30 AM till 5 PM EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H. Kim can be reached on (571)272-2293. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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/Jack I. Berman/  
Primary Examiner, Art Unit 2881

Hanway Chang  
February 19, 2009  
/H. C./  
Examiner, Art Unit 4183